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Unlimited Flexibility In New J-Jacks CCTV Distribution System

Jerrold Electronics Corporation has introduced an exciting concept in signal distribution for closed-circuit systems that permits even day-to-day changes in an installation without the need for rewiring.

Prior to the formulation of this approach it was necessary to pre-determine exactly what was to be accomplished at every location, and then designers provided for special electrical insertion and isolation units for each service contemplated. After a lengthy system analysis, the special electrical units were installed in conduit boxes in the walls and the system was then fixed permanently in its ability to provide communication services between points. Any subsequent change usually meant the reinstallation of outlets and rewiring of portions of the system.

This new system involves the provision of a basic feed-through coaxial cable unit in every classroom, viewing, or originating location. When the cable is installed, each conduit box location is fitted with a cover plate into which

is inserted a shorting or feed-through link plug. As particular needs are identified for a specific outlet, the feed-through link is removed in a matter of seconds by means of a special key. An appropriate unit is substituted for viewing, originating, or control purposes.

Figure 1 illustrates a plug-in unit that will feed two television receivers. Should it become necessary to originate a closed-circuit pickup in the room, several other plugs are available to permit insertion of video, sub-channel RF, or regular channel VHF, depending on the nature of the application.

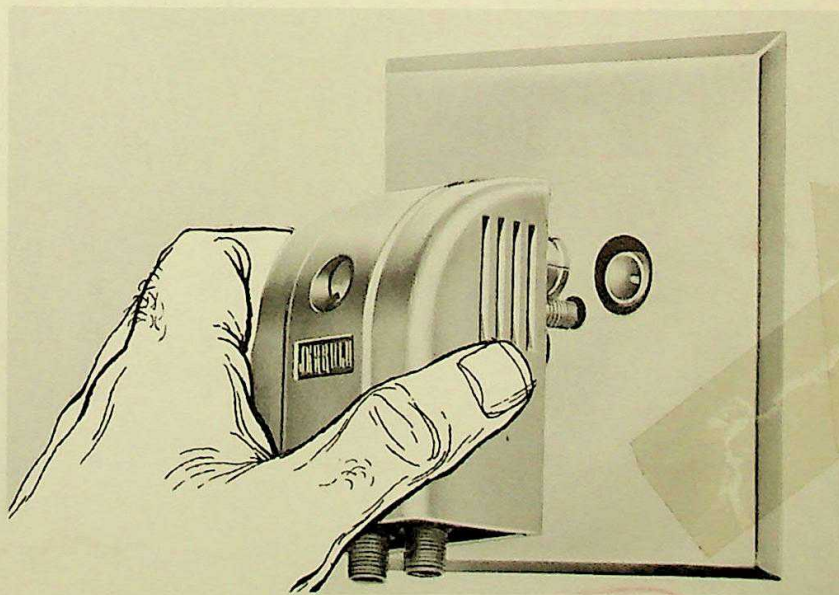


Figure 1

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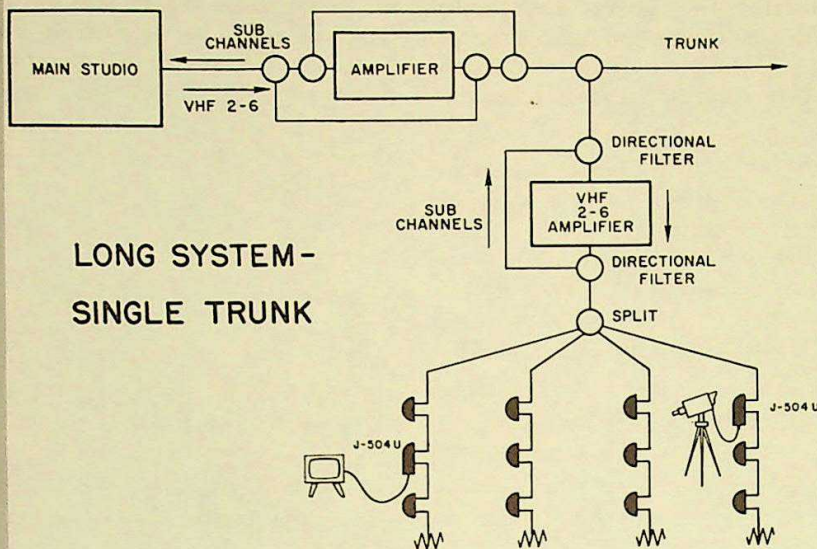


Figure 2

Physically, this system requires $\frac{3}{4}$ " conduit and 4 x 4 standard electrical boxes. The electrical engineer need only concern himself with providing an equipment location at the center of each 900' diameter circle of distribution run.

To show the versatility of the J-Jacks approach, a number of combinations are diagrammed. Figure 2 indicates the possible connection network in a building connected to a long single trunk distribution system. A long system is defined as involving in excess of 500 db cable loss. In this type of layout it is usually desirable to keep the frequency of the highest channel distributed under 100 mc. Channels below 54 mc are used for the return of signals to the studio. As shown in the drawing, the camera originates on a sub-channel which bypasses amplifiers in the building while it gets reamplified on the return. Thus, through the use of proper bypass filters, it is possible for signals to be sent in two directions on the same cable.

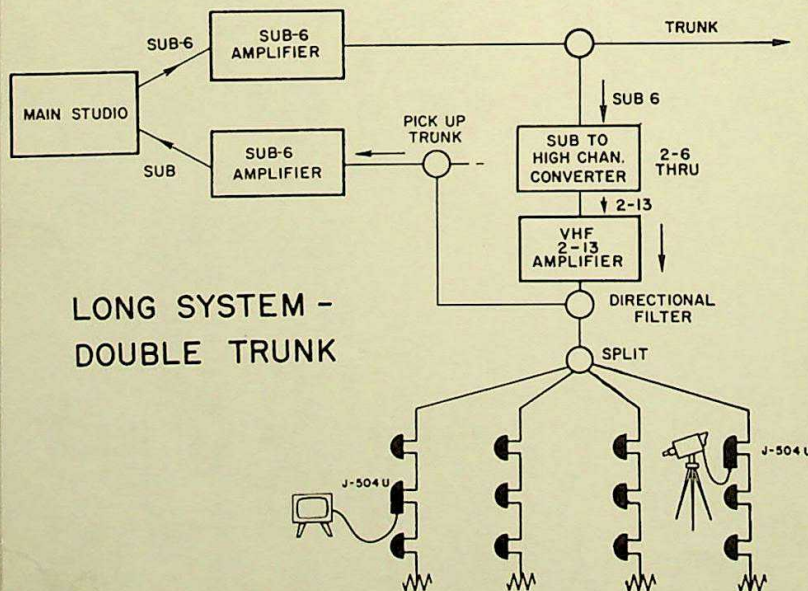


Figure 3

A variation of this plan is shown in Figure 3. This system is employed when seven channels are to be distributed while remotes are handled on sub-channels in another trunk. It should be noted that the basic system in the building is not changed from that described in Figure 2.

Extreme flexibility is incorporated in the single wire plan diagrammed in Figure 4. The coaxial cable distribution with J-Jacks is connected fore and aft of the main amplifier and is arranged to originate sub-channels with conversion at the head end to a VHF channel for distribution.

Figure 5 shows exactly the same wire diagram as Figure 4. In the latter instance, however, the user has elected to select off-the-air programs for remodulation. In this system, the remotes are handled as video signals over the feeder lines. Note that they are fed into a modulator that may also accept studio-originated programs. Figures 4 and 5 actually show the basic building system with major changes in operating techniques.

An important application of closed-circuit television is in use at the Central Washington College of Education in Ellensburg, Washington. Here, approximately two miles

of coaxial cable is employed in a distribution system, linking the town's public schools to four observation rooms on the college campus (see Figures 6 and 7). Portable TV cameras are wheeled into school classrooms to program the observation experiences for college students viewing on campus.

Another imaginative application of CCTV is the operation installed in the Oakland Veterans Hospital in Pittsburgh. This project functions as "Station WREM" and electronically distributes motion pictures, religion, education, music, and information, in addition to outside station originations (Figure 8). Patients participate in this operation and many worthwhile outcomes are reported.

The J-Jacks system is an effective answer to the school planner and architect who must make provision for CCTV in a building in the drawing board stage when all of the possible future service demands cannot be delineated. For additional details and specifications, address Jerrold Electronics Corporation, 15th and Lehigh, Philadelphia 32, Pennsylvania.

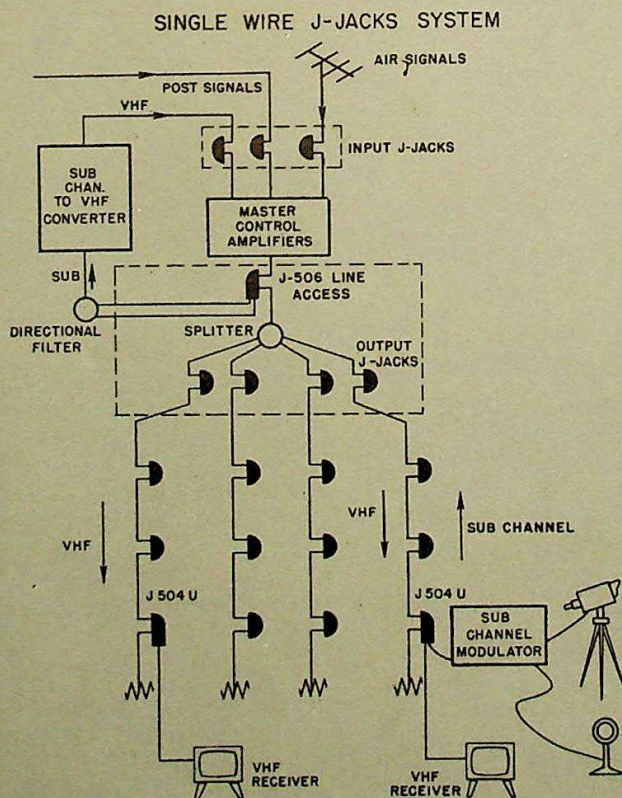


Figure 4

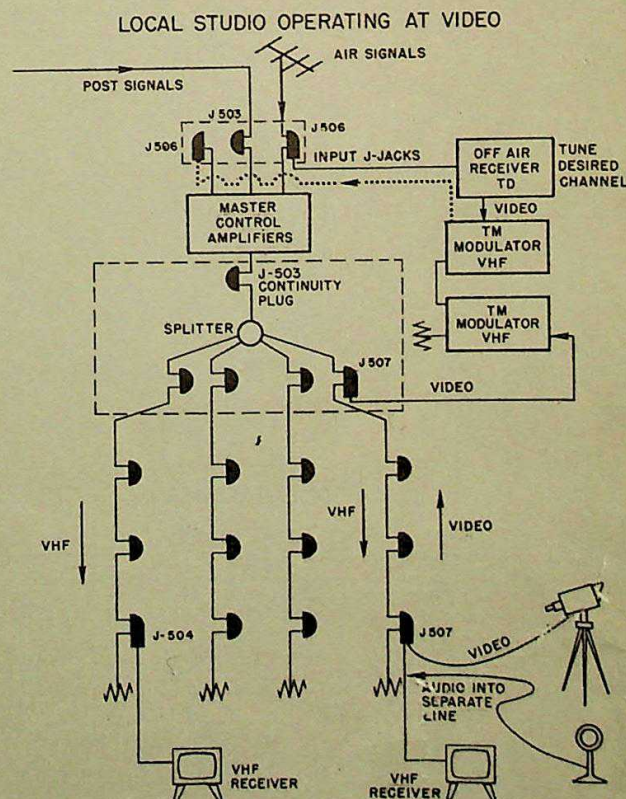


Figure 5

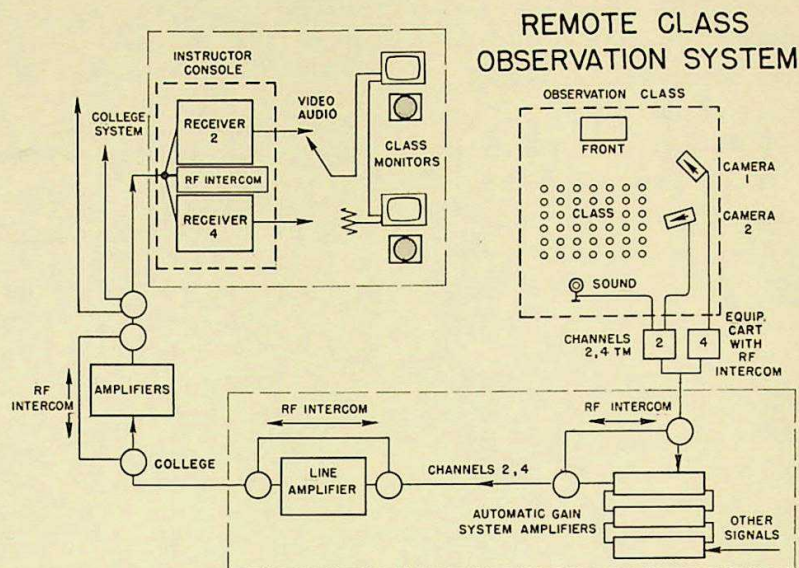
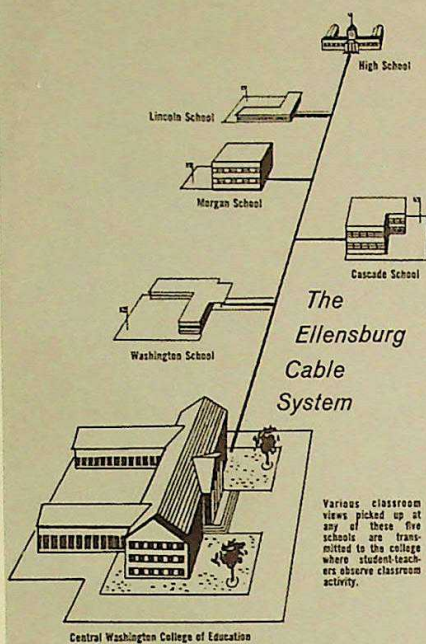


Figure 7

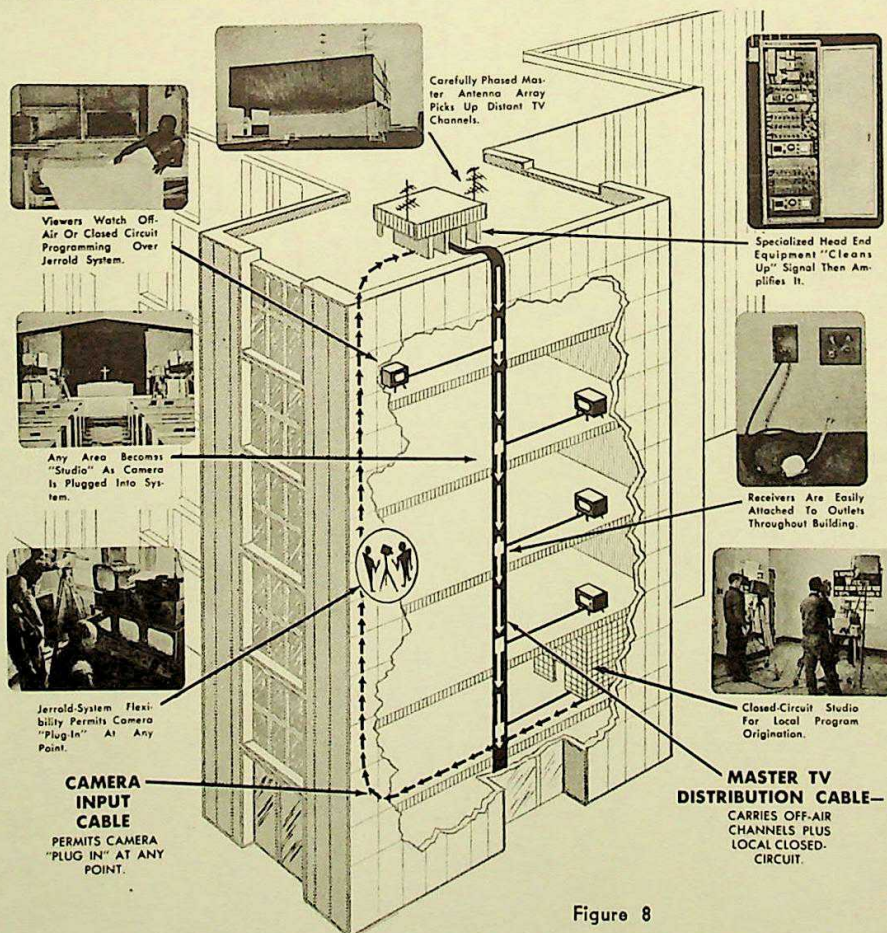


Figure 8

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